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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,970	10/02/2003	Yasuo Manabe	243134US3	6286
22850	7590	08/30/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER MORILLO, JANEL COMBS	
			ART UNIT 1742	PAPER NUMBER
			NOTIFICATION DATE 08/30/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/675,970	Applicant(s) MANABE ET AL.	
	Examiner Janelle Combs-Morillo	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 3, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (US 6,146,477) in view of JP 2001-158951A (JP'951).

Clark teaches a method of forming an aluminum alloy casting by hot isostatically pressing (HIPing) followed by solution heat treating, quenching, and artificially aging (see Ex.

1). Clark teaches that the temperature of HIPing is "about the same" as the solution heat treatment temperature, and that pressure is applied during HIPing (column 4 lines 27-30, column 5 lines 24-28).

Clark does not specify either (a) maintaining the temperature by introducing heat or (b) a cooling step in-between the hot working and solution heat treating step. It would have been

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obvious to one of ordinary skill in the art to (a) *maintain the temperature by introducing heat* immediately after the hot working step, because JP'951 teaches that maintaining the temperature at high temperatures immediately after hot working and prior to precipitation hardening is beneficial for enhancing the strength (while saving energy with respect to a cooling step in-between) see JP'951 at abstract.

Concerning claim 2, Clark teaches the alloy is preheated to the HIP temperature (column 4 lines 19-20) in an autoclave to a high temperature.

4. Claims 3, 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark and JP'951 in view of "ASM Handbook: Vol. 7 Powder Metal Technologies and Applications" (hereinafter "ASM Vol. 7") p. 608-609.

Clark and JP'951 are discussed in paragraphs above. Clark teaches the alloy is heated in an autoclave chamber to the HIP temperature (column 4 lines 19-20) and hot isostatically process in said chamber at said temperature (column 5 lines 30-33). "ASM Vol. 7" p 608-609 describes typical autoclave apparatus used to in HIP process, including a cold-loading autoclave as taught by Clark (or alternatively, a hot loading autoclave, as claimed in instant cl. 6), and wherein said vessel contains a furnace/heater together with the material to be processed in a chamber that is evacuated, purged, and heated (p608). Said autoclave furnace chamber is held to meet the instant limitations of "heat insulating structure" and "heat resistant porous heat insulator". It would have been obvious to one of ordinary skill in the art to perform a process of HIPing as taught by Clark with a cold-loading autoclave taught by "ASM Vol. 7" because Clark teaches that an autoclave is preferably used and the material is heated after loading into the autoclave, and because "ASM Vol. 7" teaches that said cold-loading type autoclave allows for near-net shape processing (p

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608, 3rd column). Alternatively, it would have been obvious to one of ordinary skill in the art to use a hot-loading type autoclave as taught by “ASM Vol. 7” because hot-loading autoclaves are known for the suitable purpose of reducing cycle time (p 608, 3rd column).

Response to Amendment/Arguments

5. In the amendment filed on July 3, 2007 applicant amended claims 1-6, and submitted various arguments traversing the rejections of record.

6. In response to applicant’s argument that the prior art does not teach maintaining a high temperature after application of pressure, JP’951 clearly teaches maintaining a high temperature immediately after hot working and prior to precipitation hardening (T5 type heat treatment).

Further, Clark does not teach a cooling step in-between HIPping and solution heating. Clark teaches: a) placing a material into hiping chamber and heating and holding at about 960 °F for about 2 hrs with a pressure of 14-16 ksi (column 5 lines 29-32), b) solution heat treating at 960-1000 °F (column 5 lines 36-37), which must involve an addition of heat and qualifies as maintaining at the high temperature. Similarly, JP’951 provides further motivation to NOT cool/quench in-between a hot working and high temperature heat treatment (though applied to a hot working step of extrusion, the same energy would be conserved for the instant invention and the HIP process taught by Clark).

7. Applicant’s argument that the present invention is allowable over the prior art of record because Clark and JP’951 are not combinable/not analogous art has not been found persuasive. Though Clark and JP’951 are drawn to different types of working applied to aluminum alloy products, both are drawn to solution heat treating aluminum alloys in order to improve

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properties, and are combinable for the reasons set forth above (Clark at col. 5 lines 34-35; JP'951 at abstract). Because both Clark and JP'951 are drawn to heat treatment of aluminum alloys, and therefore are considered analogous art both with respect to the instant claims and with respect to each other.

8. Applicant's argument that the present invention is allowable over the prior art of record because there is no evidence that the autoclave of the ASM Handbook is porous has not been found persuasive. The autoclave taught by the ASM Handbook is held to have at least some degree of porosity (that is, well within the scope of >1 hole), within the scope of the presently claimed defined/described "heat resistant porous heat insulator".

9. Applicant has not clearly shown specific unexpected results with respect to the prior art of record or criticality of the instant claimed range (wherein said results must be fully commensurate in scope with the instantly claimed ranges, etc. see MPEP 716.02 d). Evidence of unexpected properties may be in the form of a direct or indirect comparison of the claimed invention with the closest prior art which is commensurate in scope with the claims. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and MPEP §716.02(d) - § 716.02(e).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

JCM
August 21, 2007